CLAIMS:

1. A method of fabricating a set of semiconducting nanowires (10) having a desired wire diameter (d), the method comprising the steps of:

- providing a set of pre-fabricated semiconducting nanowires (10'), at least one pre-fabricated semiconducting nanowire having a wire diameter (d') larger than the desired wire diameter (d), and

- reducing the wire diameter of the at least one pre-fabricated nanowire (10') by etching, the etching being induced by electromagnetic radiation which is absorbed by the at least one pre-fabricated nanowire (10'), a minimum wavelength of the electromagnetic radiation being chosen such that the absorption of the at least one pre-fabricated nanowire being significantly reduced when the at least one pre-fabricated nanowire reaches the desired wire diameter (d).

2. A method as claimed in claim 1, wherein:

- a radiation source (30) is used which emits the electromagnetic radiation inducing the etching and electromagnetic radiation having a wavelength shorter than the minimum wavelength, and

- the electromagnetic radiation emitted by the radiation source (30) is spectrally filtered for substantially reducing electromagnetic radiation having a wavelength shorter than the minimum wavelength.

3. A method as claimed in claim 1, wherein prior to the step of reducing the wire diameter substantially all the pre-fabricated semiconducting nanowires have a diameter (d') larger than or equal to the desired wire diameter (d).

4. A method as claimed in claim 1, wherein the light inducing the etch treatment is linearly polarized along an axis (40).

5. A method as claimed in claim 1, wherein the light inducing the etch treatment has a first component being linearly polarized along a first axis (40) and a second component

being linearly polarized along a second axis (41) forming an angle larger than zero with the first axis (40).

6. A method as claimed in claim 5, the first component has a first spectrum with a first minimum wavelength and the second component has a second spectrum with a second minimum wavelength different from the first minimum wavelength.

7. A method as claimed in claim 5, wherein the first component has a first intensity and the second component has a second intensity different from the first intensity.

8. A method as claimed in claim 1, wherein the desired wire diameter (d) comprises zero.

9. A method as claimed in claim 8, wherein the light inducing etching of nanowires having a desired wire diameter of zero is linearly polarized.

10. A method as claimed in claim 1, wherein the pre-fabricated semiconducting nanowires (10) are supported by a substrate (20).

11. A method as claimed in claim 10, wherein the substrate (20) comprises an electrical conductor (110), the pre-fabricated semiconducting nanowires (10) being electrically conductively connected to the electrical conductor (110).

12. A method as claimed in claim 10, wherein the substrate (20) has a surface (23) constituted by a part (23a) supporting the pre-fabricated semiconducting nanowires (10) and another part (23b) being free from the part (23a), at least the other part (23b) being etch resistant.

13. A method as claimed in claim 12, wherein the substrate (20) comprises a first layer (24) which is not etch resistant, and a second layer (25) which is etch resistant, the second layer (25) constituting the other part of the surface (20).

14. A method as claimed in claim 13, wherein the second layer (25) is connected to the first layer (24) by a chemical bond.

15. A method as claimed in claim 13, wherein the second layer (25) is composed of one or more materials selected from alkyltriethoxysiloxane and alkyltrimethoxysiloxane.

16. A method as claimed in claim 10, wherein the step of providing the pre-fabricated semiconducting nanowires (10') comprises the following sub-steps:

- providing the substrate (20), a surface of the substrate being etchable, and
- growing semiconducting nanowires (10') on the surface of the substrate, the grown semiconducting nanowires being the pre-fabricated semiconducting nanowires,

and after the step of providing the pre-fabricated semiconducting nanowires and prior to the step of reducing the wire diameter of the at least one pre-fabricated nanowire by etching the exposed surface of the substrate is covered by an etch resistant layer (25).

17. A method as claimed in claim 10, wherein the pre-fabricated semiconducting nanowires (10) are distributed over the surface (23), a first part (18) of the surface being irradiated by light for inducing the etch treatment, pre-fabricated semiconducting nanowires (10) in a second part (19) of the surface being prevented from etching.

18. A method as claimed in claim 10, wherein the pre-fabricated semiconducting nanowires (10) are distributed over the surface, a first part (18) of the surface area being irradiated by a first light intensity, a second part (19) of the surface free from the first part (18) of the surface being irradiated by a second light intensity smaller than the first light intensity.

19. A method as claimed in claim 10, wherein the pre-fabricated semiconducting nanowires (10) are distributed over the surface, a first part (18) of the surface being irradiated by light having a first minimum wavelength, a second part (19) of the surface being irradiated by light having a second minimum wavelength different from the first minimum wavelength.

20. A method of manufacturing an electric device (100) comprising a set of nanowires (10) having a desired wire diameter (d), each nanowire (10) of the set being electrically connected to a first conductor (110) and to a second conductor (120), the method comprising the steps of:

- fabricating the set of semiconducting nanowires having the desired wire diameter according to the method of any of the Claims 1 to 19, and
- electrically contacting the nanowires of the set to a first conductor (110) and to a second conductor (120).

21. An electric device (100) comprising a set of semiconducting nanowires (10), the set comprising a first subset (10a) of nanowires each having a first wire diameter (da) and a second subset of nanowires (10b) each having a second wire diameter (db) different from the first wire diameter (da), the nanowires (10a) of the first subset being attached to a first part of a substrate (110a), the nanowires (10b) of the second subset being attached to a second part (110b) of the substrate free from the first part (110b).

22. An electric device (100) as claimed in Claim 21, wherein the nanowires (10a) of the first subset are electrically connected to a conductor (110a), the nanowires (10b) of the second subset are electrically connected to a further conductor (110b), the conductor (110a) being electrically insulated from the further conductor (110b).

23. An electric device (100) as claimed in Claim 21, wherein the nanowires (10) comprises a p-doped part (10p) and a n-doped part (10n) forming a p-n junction.

24. An electric device (100) as claimed in Claim 23, wherein the n-doped part (10n) is electrically connected to a first conductor (110) having a first distance (ln) to the p-n junction, the p-doped part (10p) is electrically connected to a second conductor (120) having a second distance (lp) to the p-n junction smaller than the first distance (ln).

25. An electric device as claimed in Claim 23 or 24, wherein the n-doped part (10n) has a wire diameter (dn) which is larger than a wire diameter (dp) of the p-doped part (10p).

26. An apparatus (29) for light induced etching of nanowires (10), comprising:
- a light source (30) for emitting light inducing the etching of the nanowires (10) and

- a monitor unit (35) for monitoring a light signal emitted by the nanowires (10) during the etching, the light signal being indicative for the wire diameter of the nanowires (10).

27. An apparatus (29) as claimed in Claim 26, further comprising a system control unit 36 for controlling the light source (30) in dependence of the light signal monitored by the monitor unit (35).

28. An apparatus (29) as claimed in Claim 26, further comprising a polarizer (39) for polarizing the light inducing the etching.

29. An apparatus (29) as claimed in Claim 26, further comprising an optical element (38) for rotating a polarization of the light inducing the etching.